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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/823,630

04/14/2004

Michel Armand

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EXAMINER

CHOI, LING SIU

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

07/07/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/823,630	Applicant(s) ARMAND ET AL.	
	Examiner Ling-Siu Choi	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 April 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2 and 3 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 3 is/are rejected.
- 7) ☒ Claim(s) 2 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 09/361,962.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>05/25/2010</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action is in response to the Amendment filed 04/06/2010. Claims 1 and 4-16 were cancelled. Claims 2-3 are now pending.

Claim Objections

2. Claims 2-3 are objected to because of the following informalities: (A) Claim 2, Formula (IV), "2M⁺" is suggested to be changed to --2M⁺ --; (B) Claim 2, line 48, "in aforesaid formulae (I) to (XVII) M⁺ represents" is suggested to be changed to --in aforesaid formulae (I) to (XVII), M⁺ represents--; (C) Claim 2, line 52, "M⁺" is suggested to be changed to --M⁺--; and (D) Claim 2, line 55, "in aforesaid formulae (I) to (XVII) the oxygen atoms" is suggested to be changed to -- in aforesaid formulae (I) to (XVII), the oxygen atoms--.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. **The following is a quotation of the second paragraph of 35 U.S.C. 112:**

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Art Unit: 1796

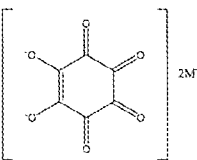
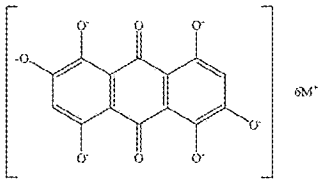
4. Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 3, line 2-3, the recitation “their **reduction products**” causes indefiniteness because claim 3 depends on claim 2, wherein it cites “**oxidation compounds** of aforesaid salts of formulae (I) to (XVII)”.

Allowable Subject Matter

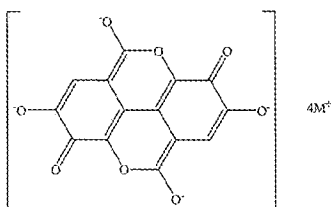
5. Claims 2-3 are allowable over the closest references: Shionogi & Co. Ltd. (GB 1,115,335), Speck (US 5,637,452), and Fleischer (US 5,512,381).

Summary of Claim 2:

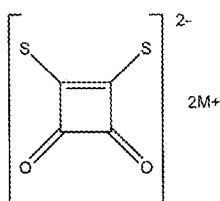
A redox compound having at least one state of oxidation state and wherein said compound is selected from the group consisting of:	
	a rhodizonic acid salt represented by formula (I): 
	a rufigallic acid salt represented by formula (II): 

Art Unit: 1796

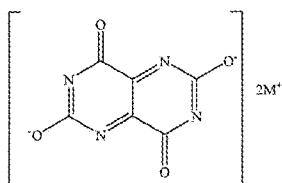
an elagic acid salt represented by formula (III):



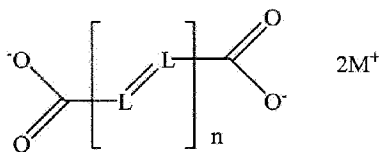
a salt of 1,2-dimercaptocyclobutenedione (dithiosquarique) acid represented by formula (IV):



a salt of 1,5 dihydropyrimido[5,4d]pyrimidine 2,4,6,8(3H,7H)tetrone represented by formula (V):



a salt of a dicarboxylic acid comprising groups linked with conjugated segments corresponding to formula (VI):



wherein L is independently CR⁵, N or C-CN, and

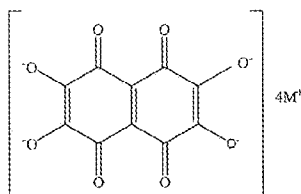
wherein R⁵ is hydrogen, C₁₋₁₂ alkyl, C₂₋₁₂ alkenyl, C₆₋₁₀ aryl,

C₆₋₁₀ aryl C₁₋₁₂ alkyl, C₁₋₁₂ alkyl C₆₋₁₀ aryl optionally substituted with one or more oxa, aza or thia of from 1 to 30 carbon atoms, and

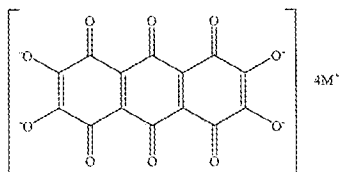
wherein two R⁵ can form an aliphatic cycle, an aromatic cycle or a heterocycle containing from 4 to 8 carbon atoms when both L are CR⁵;

Art Unit: 1796

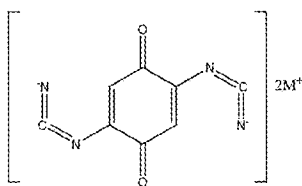
a salt of formula (VII):



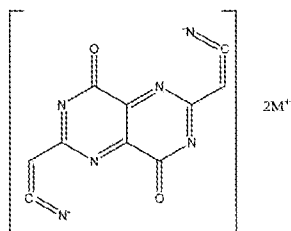
a salt of formula (VIII):



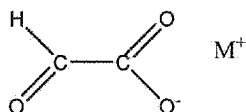
a salt of formula (IX):



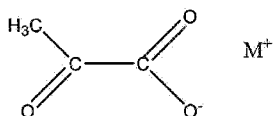
a salt of formula (X):



a salt of formula (XI) :

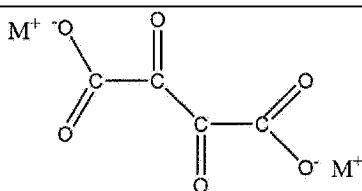


a salt of formula (XII):

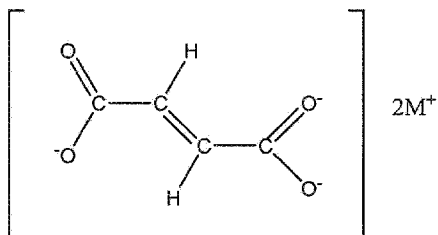


a salt of formula (XIII):

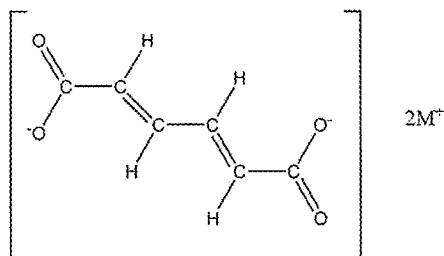
Art Unit: 1796



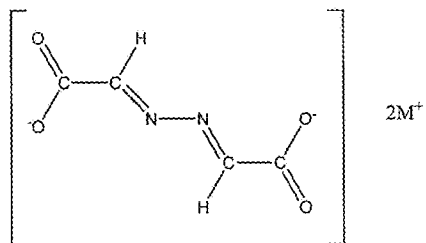
a salt of formula (XIV):



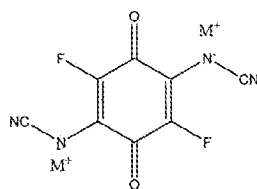
a salt of formula (XV) :



a salt of formula (XVI):



a salt of formula (XVII)



oxidation compounds of aforesaid salts of formulae (I) to (XVII);
being understood that:

Art Unit: 1796

in aforesaid formulae (I) to (XVII)

M^+ represents an alkaline metallic cation, an alkaline-earth cation, a transition metal cation, a rare earth cation, an organometallic cation, an organic cation of the "nium" type, a repetitive unit of a cationic oxidized conjugated polymer, or a monomeric or polymeric cation optionally having a redox character; and

M^+ satisfies with formula n/pM^{p+} where n is the above mentioned number of cation atoms or molecules given for aforesaid salts and p is the valency of the above mentioned cation atoms or molecules;

in aforesaid formulae (I) to (XVII)

the oxygen atoms with a double bond can be replaced with a group $-NCN$ or $-C(CN)_2$ and oxygen anion O^- can be replaced with a group N^--CN or $C^--(CN)_2$; and

wherein the compound is used as a negative electrode component in electrochemical generators when redox couples are comprised between 0.1 and 2V vs. Li^+/Li° ; or as a positive electrode component in electrochemical generators or as an active or passive electrode in electrochromic devices when redox couples are comprised between 2 and 3.7V vs. Li^+/Li° .

Shionogi & Co. Ltd. discloses potassium rhodizonate, which is used in an antidiabetic agent (col. 1, lines 15-26). It is noted that dipotassium rhodizonate reads on the claimed compound. It is noted that Shionogi & Co. Ltd. is silent on the redox properties of these polymers. In view of the compound being identical to the claimed compound, the compound will inherit such redox properties. Thus, Shionogi & Co. Ltd. do not teach or fairly suggest the claimed redox compound, wherein the compound is used as a negative electrode component in electrochemical generators when redox couples are comprised between 0.1 and 2V vs. Li^+/Li° ; or as a positive electrode

Art Unit: 1796

component in electrochemical generators or as an active or passive electrode in electrochromic devices when redox couples are comprised between 2 and 3.7V vs. Li+/Li°.

Speck discloses an aqueous reagent comprising elagic acid and a metal ion such as Ni^{2+} , Co^{2+} , Fe^{3+} , Cu^+ , or Cu^{2+} , which reads on the metal salt of elagic acid (abstract). It is noted that Speck is silent on the redox properties of this compound. In view of this compound being identical to the claimed compound, this compound will inherit such redox properties. Thus, Speck do not teach or fairly suggest the claimed redox compound, wherein the compound is used as a negative electrode component in electrochemical generators when redox couples are comprised between 0.1 and 2V vs. Li+/Li°; or as a positive electrode component in electrochemical generators or as an active or passive electrode in electrochromic devices when redox couples are comprised between 2 and 3.7V vs. Li+/Li°.

Fleischer discloses a battery comprising an anode, a cathode, and a solid state electrolyte between the anode and the cathode, wherein the anode is composed of a material containing a proton-donating aromatic compound, the proton-donating aromatic compound being rhodizonic acid (claim 12). However, Fleischer do not teach or fairly suggest the claimed redox compound [rhodizonic acid salt], wherein the compound is used as a negative electrode component in electrochemical generators when redox couples are comprised between 0.1 and 2V vs. Li+/Li°; or as a positive electrode component in electrochemical generators or as an active or passive electrode in electrochromic devices when redox couples are comprised between 2 and 3.7V vs.

Art Unit: 1796

Li+/Li°.

In light of the above discussion, it is evident as to why the present claims are patentable over the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the

Art Unit: 1796

examiner should be directed to Ling-Siu Choi whose telephone number is 571-272-1098.

If attempt to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached on 571-272-1114.

/Ling-Siu Choi/

Primary Examiner, Art Unit 1796

July 04, 2010